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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Applicant: Rillie	)	Art Unit: 3637
Serial No.: 09/823,474	)	Examiner: Nguyen
Filed: March 30, 2001	)	**1128.014**
For: **SKYLIGHT TUBE WITH REFLECTIVE FILM AND SURFACE IRREGULARITIES**	)	December 9, 2003 750 B STREET, Suite 3120 San Diego, CA 92101

APPEAL BRIEF

Commissioner of Patents and Trademarks
Washington, DC 20231

Dear Sir:

This brief is further to the Office Action dated December 2, 2003 and is submitted under 35 U.S.C. §134. This appeal is further to Appellant's Notice of Appeal filed herewith.

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(1) Real Party in Interest

The real party in interest is the assignee, Solatube, Inc.

(2) Related Appeals/Interferences

No other appeals or interferences exist which relate to the present application or appeal.

(3) Status of Claims

Claims 1-18, 23-26, 33-35, and 37 are pending and finally rejected.

(4) Status of Amendments

No amendments are outstanding.

(5) Summary of Invention

The invention of Claim 1 is a skylight assembly that has a non-transparent shaft defining at least one segment, with the segment having an axially straight outer surface throughout bounded by opposed ends. A layer of reflective film is on the inside of the segment, and an adhesive holds the film to the segment. A surface irregularity is formed in the adhesive, the reflective film, or the segment. Thus, according to Claim 1 the surface irregularity is formed somewhere between the two ends of the axially straight surface of the segment.

Independent Claim 11 reflects the above structure in means-plus-function language, and independent Claim 14 requires the surface irregularity to be formed in the segment. On the other hand, independent Claim 23 requires the surface irregularity to be formed in the adhesive.

(6) **Issues**

(a) Whether Claims 1-3, 8, 9, 11-15, and 18 are unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(b) Whether Claim 4 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(c) Whether Claim 5 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(d) Whether Claim 6 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(e) Whether Claim 7 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(f) Whether Claim 10 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(g) Whether Claims 16, 17, and 24-26 are unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson.

(h) Whether Claim 23 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson.

(i) Whether Claims 33-35 are unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby.

(j) Whether Claim 37 is unpatentable under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson.

(7) Grouping of Claims

The Claims are grouped separately as delineated above because different grounds for rejection have been made for different claims. Namely, not only have some limitations been rejected on a different combination of references than other references, but within groups of claims rejected under a common group of references, certain limitations have been rejected based on differing grounds that include the examiner's personal opinion as to what is obvious thrown in to remedy prior art shortfalls, thus in effect establishing different bases for the rejections.

(8a) Argument

Claims 1-13 and 33-35 have been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Of the above claims, Claims 1, 11, and 14 are independent and grouped together. All of them require at least one segment that has an axially straight outer surface throughout bounded by opposed ends, with a surface irregularity in effect formed between the ends. For instance, in the case of Claim 1, the irregularity can be formed on reflective film that is on the inside of the segment, or on a layer of adhesive that must hold the film to the segment, or on the segment itself, but in any case the irregularity is clearly formed between the ends in the portion of the skylight that has an axially straight surface. The same is true of Claim 11, which requires surface irregularity means for diffusing light as it is reflected through ***the length of the segment***, as well as Claim 14, which requires forming surface irregularities at least in the segment.

This structure is obtained by no combination of the relied-upon references. The main reference, Freeman, teaches an accordion-shaped skylight shaft. Because it is accordion-shaped (or, in the examiner's phrasing, "folded"), the examiner has essentially read the radial portions (presumably, the "folds") that are

between adjacent segments of the accordion as the claimed "irregularity". However, to the extent that there can be said to be an axially straight wall anywhere in Freeman, there is no structure between the ends of any such wall that can be considered to be a "surface irregularity", since Freeman's shaft is decidedly smooth in these regions. Accordingly, to overcome the game being played with Freeman, Appellant amended Claims 1, 11, and 14 to their present form, which cannot be distorted under even the broadest possible interpretation to read on Freeman no matter how ardently it is wished to deny Appellant a patent.

And indeed, the rejection admits as much, page 2 of the Office Action, seventh and eighth lines from the bottom. Why, then, has no Notice of Allowance issued? Because, per the examiner, the presently claimed distinguishing structure "is not critical" to the invention.

Appellant is not aware of any "criticality" requirement in the general test for obvious, beyond the very narrow situation wherein a claimed numerical range overlaps with a prior art numerical range and it is asserted that the claimed range is patentable. Indeed, an invention need not operate differently than the prior art to be patentable, but need only be structurally different, Hewlett-Packard Co. v. Bausch & Laumb Inc., 909 F.2d 1464, 15 U.S.P.Q.2d 1525 (Fed. Cir. 1990).

Thus, what is required to show that Claims 1, 11, and 14 are unpatentable over Freeman in view of the other references is where, either in the prior art or in the general knowledge of the skilled artisan (of which absolutely no evidence has been adduced to date), a suggestion exists to make a surface irregularity in the areas between the folds of Freeman's accordion-shaped tube, and this has not even been attempted. In essence, no *prima facie* case of obviousness has been made, much less a proper one that conforms to MPEP §2143.

(8b) Argument

Claim 4 has been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Claim 4 requires that the film have plural layers, a limitation that has been breezily disposed of not by a prior art showing of plural layer film but by an examiner-invented "motivation" to provide thicker film "thus preventing the sunlight heat peel off easily" (sic). Not having been lifted from the prior art, the incoherence of this "motivation" can perhaps be forgiven, but its complete disregard of the requirement for finding a ***prior art*** suggestion to modify a reference as proposed cannot be.

(8c) Argument

Claim 5 has been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Claim 5 requires the film to be greater than fifty percent (50%) specularly reflective, a limitation brushed off as being, in the examiner's unsupported opinion, a matter of obvious design choice. Again, no evidence from the prior art or the general level of knowledge in the art, just that it is the examiner's deeply held personal opinion that Claim 5 is obvious. Enough said.

(8d) Argument

Claim 6 has been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Claim 6 requires plural surface irregularities to be formed without defining a pattern, a limitation rejected on the basis of Figure 4 of Freeman without further explication. Here, at least a gesture has been made to find something in the prior art to reject a limitation, but the obvious question is, on what, precisely, in Figure 4 is the examiner relying? What in Figure 4 is being used as the surface irregularity? And where

is the lack of pattern? Everything in Figure 4 looks pretty patterned to Appellant, so the reliance on it to reject Claim 6 is at best enigmatic.

(8e) Argument

Claim 7 has been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Claim 7 requires the surface irregularity to be formed in the adhesive as the adhesive is deposited on the inside of the shaft. All the examiner has to say on this score is that it would have been obvious to use Bixby's adhesive to glue a reflective film onto Freeman, but what has been studiously ignored in the rejection is any mention of where the prior art teaches or suggests forming the surface irregularity in the adhesive. Certainly, Bixby mentions no such thing about its adhesive. Thus, even if the references were combined as proposed, Claim 7 would not be arrived at.

(8f) Argument

Claim 10 has been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. Claim 10 requires each surface irregularity to include an upper face establishing a first angle with respect to a long axis of the shaft, and a lower face establishing a second angle with respect to the long axis of the shaft, with the first angle being more acute than the second angle. Pretty precise stuff that the examiner readily admits has been taught nowhere in the cited references, so why no indicated allowability? Because, per the examiner, this limitation is nothing more than the "provision of adjustability" for the purpose of providing reflection "in different angles".

Without belaboring the issue *ad infinitum*, once again no prior art suggestion of the proferred motivation (in this case, of the benefits of providing different angles of reflection) has been identified. Moreover, an irrelevant fifty year old case (In re Stevens) that deals with replacing a pivot in a fishing rod with a universal joint has been lifted from MPEP §2144.04 and misapplied, insofar as nothing in the present claims is recited as being "adjustable". Makes one wonder how the Office Action made it past the SPE.

(8g) Argument

Claims 16, 17, and 24-26 have been rejected under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson. Here, the examiner conflates two separately claimed methods for making the surface irregularity - using rollers, and using a press - into one, rejecting both on the basis of Knudson's rollers. Is it the examiner's position that Knudson's rollers equate to a press? If so, a prior art showing of said equivalence should be made, not simply assumed.

But in any case it isn't proper to combine Knudson with the skylight tube references, because Knudson is designed to bend a wall portion into a curve having opposed left and right edges without suggesting that its principles could be applied to making round skylight tubes that have no left and right edges and that are typically made of much more delicate material than walls. Indeed, nowhere does Knudson even mention the words "skylight" or "tube". Only the examiner has divined an application of Knudson that none of the relied-upon references remotely envision, rendering the proposed combination improper under MPEP §2143 (once again, that old bugaboo of having to come up with a ***prior art*** suggestion to combine references).

(8h) Argument

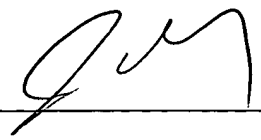
Claim 23 has been rejected under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson. There is simply no teaching or suggestion in Freeman, Bixby, or Knudson to form surface irregularities in an adhesive that holds a reflective film to a skylight tube. Knudson nowhere mentions the words "adhesive" or "glue", much less does Knudson suggest making irregularities in the adhesive that is applied to a flat substrate to hold a reflective film.

(8i) Argument

Claims 33-35 have been rejected under 35 U.S.C. §103 as being unpatentable over Freeman in view of Bixby. These claims, which recite that the surface irregularities are plural longitudinal grooves, have been rejected based on the bare allegation that somewhere, Freeman teaches longitudinal grooves. Understandably, the examiner has not graced the record with an identification of where, precisely, Freeman teaches longitudinal grooves, because in fact it doesn't. Because this rejection relies on such a manifest distortion, it will not be dignified with further rebuttal.

(8j) Argument

Claim 37 has been rejected under 35 U.S.C. §103 as being obvious over Freeman in view of Bixby and further in view of Knudson. The arguments advanced in 8i are incorporated herein.



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APPENDIX A - APPEALED CLAIMS

1. A skylight assembly, comprising:
at least one skylight shaft defining at least one segment, the segment having an axially straight outer surface throughout bounded by opposed ends;
at least one layer of reflective film on the inside of the segment;
at least one layer of adhesive holding the film to the segment; and
at least one surface irregularity formed in at least one of: the adhesive, the reflective film, and the segment;
wherein the shaft is not transparent.

2. The skylight assembly of Claim 1, further comprising:
a skylight dome covering a top end of the shaft.

3. The skylight assembly of Claim 1, further comprising:
a diffuser plate covering a bottom end of the shaft.

4. The skylight assembly of Claim 1, wherein the film includes plural layers.

5. The skylight assembly of Claim 1, wherein the film is greater than fifty percent (50%) specularly reflective.

6. The skylight assembly of Claim 5, wherein plural surface irregularities are formed without defining a pattern.

7. The skylight assembly of Claim 1, wherein the surface irregularity is formed in the adhesive as the adhesive is deposited on the inside of the shaft.

8. The skylight assembly of Claim 1, further comprising:
plural surface irregularities.

9. The skylight assembly of Claim 1, wherein the surface irregularities establish a pattern.

10. The skylight assembly of Claim 1, wherein each surface irregularity includes:
an upper face establishing a first angle with respect to a long axis of the shaft; and
a lower face establishing a second angle with respect to the long axis of the shaft, the first angle being more acute than the second angle.

11. A skylight assembly, comprising:

at least one skylight shaft defining at least one segment, the segment having an axially straight outer surface throughout bounded by opposed ends;

at least one layer of reflective film on the inside of the segment;

at least one layer of adhesive holding the film to the segment; and

surface irregularity means for diffusing light as it is reflected through the length of the segment.

12. The skylight assembly of Claim 11, further comprising:
means for allowing only light to enter the skylight shaft.

13. The skylight assembly of Claim 11, further comprising:
means for further diffusing light reflected through the length of the shaft as it exits the shaft.

14. A method for making a skylight shaft, comprising the acts of:
providing a flat substrate defining at least one segment, the segment having an axially straight outer surface throughout bounded by opposed ends;
forming surface irregularities at least in the segment;
rendering at least the segment reflective; and
forming a shaft out of the substrate.

15. The method of Claim 14, wherein the surface irregularities are formed by moving the substrate between two rollers closely spaced from each other, at least one roller having means for forming the surface irregularities in the substrate.

16. The method of Claim 14, wherein the surface irregularities are formed by rolling at least one roller across the substrate, the roller having means for forming the surface irregularities in the substrate.

17. The method of Claim 14, wherein the surface irregularities are formed by pressing the substrate with a press having means for forming the surface irregularities in the substrate.

18. The method of Claim 14, wherein the rendering act is undertaken by adhering a reflective film onto the substrate.

23. A method for making a skylight shaft, comprising the acts of:
providing a flat substrate;
applying adhesive to the substrate;
forming surface irregularities in the adhesive;
applying a reflective film to the adhesive; and
forming a shaft out of the substrate.

24. The method of Claim 23, wherein the surface irregularities are formed by moving the substrate between two rollers closely spaced from each other, at least one roller having means for forming the surface irregularities in the adhesive.

25. The method of Claim 23, wherein the surface irregularities are formed by rolling at least one roller across the substrate, the roller having means for forming the surface irregularities in the adhesive.

26. The method of Claim 23, wherein the surface irregularities are formed by pressing the substrate with a press having means form forming the surface irregularities in the adhesive.

33. The skylight assembly of Claim 1, comprising plural surface irregularities establishing plural longitudinal grooves.

34. The skylight assembly of Claim 11, wherein the means for diffusing light includes plural longitudinal grooves.

35. The method of Claim 14, wherein the surface irregularities are shaped like parallel longitudinal grooves.

37. The method of Claim 23, wherein the surface irregularities are shaped like parallel longitudinal grooves.

38. The skylight assembly of Claim 27, wherein the means for diffusing light includes plural longitudinal grooves.

39. The skylight assembly of Claim 30, wherein the diffusion anomaly is at least one longitudinal groove.